

(a) transferring the nucleus of the differentiated cell or a cell obtained by culture thereof into a suitable enucleated recipient cell from the same species, thereby obtaining a reconstituted cell,

wherein the differentiated cell or cell obtained by culture thereof is a quiescent diploid cell at the time of transfer;

(b) activating the recipient cell before, during or after nuclear transfer; and

(c) incubating the reconstituted cell such that the embryo clone develops, wherein the embryo clone is capable of developing to term.

93. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the recipient cell used in the method is an oocyte.

94. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the differentiated cell or cell obtained by culture thereof is a cultured cell.

95. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a sheep embryo.

96. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a pig embryo.

97. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a goat embryo.

98. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a mouse embryo.

99. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a rabbit embryo.

100. (NEW) The non-human mammalian embryo clone according to claim 92, wherein the embryo is a cow embryo.

101. (NEW) A reconstituted non-human mammalian clone of a pre-existing, non-embryonic mammal from which a differentiated cell has been taken, wherein the non-human mammalian clone has the same set of chromosomes as the pre-existing mammal,

wherein the clone is produced by a process comprising:

(a) transferring the embryo clone according to claim 92 to a female of the same species; and

(b) developing the embryo clone into the non-human mammalian clone.

102. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a sheep.

103. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a pig.

104. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a goat.

105. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a mouse.

106. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a rabbit.

107. (NEW) The non-human mammalian clone according to claim 101, wherein the mammal is a cow.

108. (NEW) A non-human mammalian clone of a pre-existing, non-embryonic mammal from which a differentiated cell has been taken,

wherein the non-human mammalian clone has the same set of chromosomes as the pre-existing mammal,

wherein the clone is produced by a process comprising:

(a) transferring the nucleus of the differentiated cell or a cell obtained by culture thereof into a suitable enucleated recipient cell from the same species, thereby obtaining a reconstituted cell,

wherein the differentiated cell or cell obtained by culture thereof is a quiescent diploid cell at the time of transfer;

- (b) activating the recipient cell before, during or after nuclear transfer;
- (c) incubating the reconstituted cell such that an embryo develops;
- (d) transferring the embryo to a female of the same species; and
- (e) developing the embryo into the non-human mammalian clone.

109. (NEW) The non-human mammalian clone according to claim 108, wherein the differentiated cell or cell obtained by culture thereof is a cultured cell.

110. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a sheep.

111. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a pig.

112. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a goat.

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113. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a mouse.

114. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a rabbit.

115. (NEW) The non-human mammalian clone according to claim 108, wherein the mammal is a cow.

116. (NEW) A non-human mammalian embryo clone of a pre-existing, non-embryonic mammal from which a differentiated cell has been taken, wherein the non-human mammalian embryo clone has the same set of chromosomes as the pre-existing mammal, is capable of developing to term, and is cloned by transfer of a nucleus from the differentiated cell or a cell obtained by culture thereof into an oocyte of the same mammalian species, and wherein the cell is a quiescent diploid cell at the time of nuclear transfer.

117. (NEW) The non-human mammalian embryo clone of claim 116, wherein the non-human mammal is selected from the group consisting of cows, sheep, pigs, goats, mice, and rabbits.

118. (NEW) The non-human mammalian embryo clone of claim 116, wherein the nucleus is transferred from a cultured cell.

119. (NEW) The non-human mammalian embryo clone of claim 116, wherein the nucleus is transferred from a cell in which quiescence has been induced.

120. (NEW) The non-human mammalian embryo clone of claim 116, wherein the nucleus is transferred from a cell that is naturally quiescent.

121. (NEW) A non-human mammalian clone of a pre-existing, non-embryonic mammal from which a differentiated cell has been taken, wherein the non-human mammalian clone has the same set of chromosomes as the pre-existing mammal, is capable of developing to term, and is cloned by nuclear transfer of a nucleus from the differentiated cell or a cell obtained by culture thereof into an oocyte of the same mammalian species, and wherein the cell is a quiescent diploid cell at the time of nuclear transfer.

122. (NEW) The non-human mammalian clone of claim 121, wherein the pre-existing, individual non-human mammal is selected from the group consisting of cows, sheep, pigs, goats, mice, and rabbits.

123. (NEW) The non-human mammalian clone of claim 121, wherein the nucleus is transferred from a cultured cell.

124. (NEW) The non-human mammalian clone of claim 121, wherein the nucleus is transferred from a cell in which quiescence has been induced.

125. (NEW) The non-human mammalian clone of claim 121, wherein the nucleus is transferred from a cell that is naturally quiescent.

126. (NEW) A reconstituted non-human mammalian embryo clone of a pre-existing, non-embryonic mammal from which a differentiated cell has been taken,

wherein the embryo clone is produced by a process comprising:

- (a) obtaining the differentiated cell from the pre-existing, non-embryonic, mammal;
- (b) genetically modifying the differentiated cell;

(c) transferring the nucleus of the genetically modified cell into a suitable enucleated recipient cell from the same species, thereby obtaining a reconstituted cell, wherein the genetically modified cell is a quiescent diploid cell at the time of transfer;

(d) activating the recipient cell before, during or after nuclear transfer; and

(e) incubating the reconstituted cell such that the embryo clone develops, wherein the embryo clone is capable of developing to term.

127. (NEW) A non-human mammalian clone of a pre-existing, non-embryonic, mammal from which a differentiated cell has been taken,

wherein the clone is produced by a process comprising:

(a) obtaining the differentiated cell from the pre-existing, non-embryonic, mammal;

(b) genetically modifying the differentiated cell;

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(c) transferring the nucleus of the genetically modified cell into a suitable enucleated recipient cell from the same species, thereby obtaining a reconstituted cell, wherein the genetically modified cell is a quiescent diploid cell at the time of transfer;

(d) activating the recipient cell before, during or after nuclear transfer;

(e) incubating the reconstituted cell such that an embryo develops;

(f) transferring the embryo to a female of the same species; and

(g) developing the embryo into the non-human mammalian clone.

128. (NEW) A non-human, non-embryonic mammal from which a differentiated donor cell has been taken and a clone thereof,

wherein the clone has the same set of chromosomes as the non-human mammal and wherein the clone is made by a process comprising:

(a) transferring the nucleus of the differentiated cell or a cell obtained by culture thereof into a suitable enucleated recipient cell from the same species,

wherein the differentiated cell or cell obtained by culture thereof is a quiescent diploid cell at the time of transfer;

(b) activating the recipient cell before, during or after nuclear transfer;

(c) incubating the reconstituted cell such that an embryo develops;

(d) transferring the embryo to a female of the same species; and

(e) developing the embryo to term into a clone that has the same set of chromosomes as the non-human mammal.

129. (NEW) A cell culture comprising non-human mammalian differentiated cells and a non-human mammalian clone produced therefrom, wherein the clone has the same set of chromosomes as cells in the cell culture, and wherein the clone is made by a process comprising:

(a) transferring the nucleus of a differentiated cell from the cell culture cell into a suitable enucleated recipient cell from the same species,

wherein the differentiated cell is a quiescent diploid cell at the time of transfer;

(b) activating the recipient cell before, during or after nuclear transfer;

(c) incubating the reconstituted cell such that an embryo develops;

(d) transferring the embryo to a female of the same species; and

(e) developing the embryo to term into a clone that has the same set of chromosomes as cells in the cell culture.